

ABSTRACT

A double diffused MOS (DMOS) transistor structure is provided that uses a trench
trough suitable for high-density integration with mixed signal analog and digital circuit
applications. The DMOS device can be added to any advanced CMOS process using shallow
5 trench isolation by adding additional process steps for trench trough formation, a trench
implant and a P-body implant. The trench trough and trench implant provide a novel method
of forming a drain extension for a high-voltage DMOS device.